



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-0935; Directorate Identifier 2014-NM-243-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking (SNPRM); reopening of comment period.

SUMMARY: We are revising an earlier proposed airworthiness directive (AD) for certain The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. The notice of proposed rulemaking (NPRM) proposed to require replacing the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks with new, improved wire bundles inserted into conduit liners. The NPRM was prompted by several reports of chafing of the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks due to high vibration. These wire bundles can chafe through the wire sleeving into the insulation, exposing the wire conductors. This action revises the NPRM by adding a revision to the maintenance or inspection program, as applicable, to include critical design configuration control limitations (CDCCL) for the fuel boost pump wiring. We are proposing this SNPRM to prevent chafing of the wire bundles and subsequent arcing between the wiring and the electrical conduit creating an ignition source in the fuel tanks, which could result in a fire and consequent fuel tank explosion. Since these actions impose an additional burden over that proposed in the NPRM, we are reopening the comment period to allow the public the chance to comment on these proposed changes.

DATES: We must receive comments on this SNPRM by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this SNPRM, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone: 206-544-5000, extension 1; fax: 206-766-5680; Internet: <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. Boeing Alert Service Bulletin 747-28A2306, dated October 2, 2014, is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-0935.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-0935; or in person at the Docket

Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Tung Tran, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6505; fax: 425-917-6590; email: tung.tran@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2015-0935; Directorate Identifier 2014-NM-243-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We issued an NPRM to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series

airplanes. The NPRM published in the Federal Register on May 1, 2015 (80 FR 24850) (“the NPRM”). The NPRM proposed to require replacing the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks with new, improved wire bundles inserted into conduit liners.

Actions Since the NPRM was Issued

Since we issued the NPRM, we have determined that it is necessary to revise the NPRM by adding a revision to the maintenance or inspection program, as applicable, to include critical design configuration control limitations (CDCCL) for the fuel boost pump wiring.

Related AD

AD 2011-15-03, Amendment 39-16750 (76 FR 41659, July 15, 2011) (“AD 2011-15-03”), superseded AD 97-26-07, Amendment 39-10250 (62 FR 65352, December 12, 1997), and requires repetitive inspections to detect damage of the sleeving and wire bundles of the boost pumps of the numbers 1 and 4 main fuel tanks, and of the auxiliary tank jettison pumps (if installed); replacement of any damaged sleeving with new sleeving; and repair or replacement of any damaged wires with new wires. For airplanes on which any burned wires are found, AD 2011-15-03 also requires an inspection to detect damage of the conduit, and replacement of any damaged conduit with a serviceable conduit. AD 2011-15-03 reduced the initial compliance time and repetitive inspection interval in AD 97-26-07. AD 2011-15-03 was prompted by fleet information indicating that the repetitive inspection interval in AD 97-26-07 was too long because excessive chafing of the sleeving continued to occur much earlier than expected between scheduled inspections. Accomplishing the replacement specified in this proposed AD would terminate the inspections required by paragraphs (g), (h), and (n) of AD 2011-15-03.

Comments

We gave the public the opportunity to comment on the NPRM. The following presents the comments received on the NPRM and the FAA's response to each comment.

Support for the NPRM

Boeing concurred with the contents of the NPRM.

Request to Withdraw the NPRM

UPS recommended that we withdraw the NPRM so that UPS can continue doing the inspections required by AD 2011-15-03. UPS stated that it has been inspecting the forward and aft boost pump wire bundles and sleeving since 2007 per the requirements in AD 2011-15-03, and is satisfied with the current inspection, which detects signs of wear before major damage occurs. UPS added that the wire bundle replacement in this NPRM is a burden to the airlines, without adding safety to the boost pump or airplane fuel system.

We do not agree with the commenter's request to withdraw the NPRM. We agree that the inspection required by AD 2011-15-03 is likely to detect signs of wear before major damage occurs, but the potential for an ignition source inside the fuel tank due to the single failure condition still exists. The manufacturer has now developed an improved wire bundle installation that eliminates the single failure condition. We have determined that installation of the improved design is required to eliminate the need for periodic maintenance and inspections in order to ensure safety.

Request to Change Paragraph (g) of the Proposed AD (in the NPRM)

United Airlines (United) asked that paragraph (g) of the proposed AD (in the NPRM) be changed to add paragraphs (g), (h), (i), (j), and (k) of AD 2011-15-03, to the language which terminates the repetitive inspections required by paragraph (n) of AD 2011-15-03. United stated that those paragraphs are also terminated after doing the wire bundle replacement required by paragraph (g) of the proposed AD (in the NPRM).

We agree to add paragraphs (g) and (h) of AD 2011-15-03, to the terminating action language specified in paragraph (g) of this proposed AD, because the replacement required by this proposed AD would terminate the inspections required by paragraphs (g) and (h) of AD 2011-15-03. However, paragraphs (i), (j), and (k) of AD 2011-15-03 are on-condition corrective actions, which must be done depending on the findings during any inspection required by paragraph (g) or (h) of AD 2011-15-03. Therefore, we have not referenced paragraphs (i), (j), and (k) of AD 2011-15-03 in paragraph (g) of this proposed AD.

Request to Add AWL Items

United stated that incorporating airworthiness limitation (AWL) tasks 28-AWL-24 (747 CL Certification Maintenance Requirements) and 28-AWL-35 (747-400 Maintenance Planning Data) should also be required by the NPRM.

We agree that this proposed AD should include revising the maintenance or inspection program, as applicable, by incorporating the CDCCL tasks related to accomplishing Boeing Alert Service Bulletin 747-28A2306, dated October 2, 2014; therefore, we have added new paragraphs (h) and (i) to this proposed AD to include those requirements. We have redesignated subsequent paragraphs accordingly.

Related Service Information under 1 CFR part 51

We reviewed the following service information:

- Boeing Alert Service Bulletin 747-28A2306, dated October 2, 2014. The service information describes procedures for replacing the wire bundles of the electrical conduit inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks.

- AWL No. 28-AWL-24, “Fuel Boost Pump Wires In Conduit Installation – In Fuel Tank,” of Sub-section C.1, “Fuel Tank Ignition Prevention,” of Section C., “Airworthiness Limitations – Systems,” of the Boeing 747-100/200/300/SP

Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs) Document D6-13747-CMR, Revision June 2014. The service information describes a CDCCL for the fuel boost pump wiring.

- AWL No. 28-AWL-35, “Fuel Boost Pump Wires In Conduit Installation – In Fuel Tank,” of Sub-section B.1, “Fuel System Ignition Prevention,” of Section B, “Airworthiness Limitations (AWLs) – Systems,” of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of Boeing 747-400 Maintenance Planning Data (MPD) Document D621U400-9, Revision June 2014. The service information describes a CDCCL for the fuel boost pump wiring.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA’s Determination

We are proposing this SNPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above expand the scope of the NPRM (80 FR 24850, May 1, 2013). As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

Proposed Requirements of this SNPRM

This SNPRM would require accomplishing the actions specified in Boeing Alert Service Bulletin 747-28A2306, dated October 2, 2014, described previously. This SNPRM would also require revising the maintenance or inspection program, as applicable, to include CDCCLs for the fuel boost pump wiring.

This AD requires revisions to certain operator maintenance documents to include new actions (e.g., inspections) and CDCCLs. Compliance with these actions and

CDCCLs is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by this proposed AD, the operator may not be able to accomplish the actions described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval for an alternative method of compliance according to paragraph (j) of this AD. The request should include a description of changes to the required actions that will ensure the continued damage tolerance of the affected structure.

Notwithstanding any other maintenance or operational requirements, components that have been identified as airworthy or installed on the affected airplanes before accomplishing the revision of the airplane maintenance or inspection program specified in this proposed AD do not need to be reworked in accordance with the CDCCLs. However, once the airplane maintenance or inspection program has been revised as required by this proposed AD, future maintenance actions on these components must be done in accordance with the CDCCLs.

Costs of Compliance

We estimate that this proposed AD affects 176 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

| Action | Labor cost | Parts cost | Cost per product | Cost on U.S. operators |
|---------------|---|-------------------|-------------------------|-------------------------------|
| Replacement | Up to 53 work-hours X \$85 per hour = \$4,505 | \$4,600 | Up to \$9,105 | Up to \$1,602,480 |

| Action | Labor cost | Parts cost | Cost per product | Cost on U.S. operators |
|--|------------------------------------|-------------------|-------------------------|-------------------------------|
| Revise Maintenance or inspection program | 1 work-hour X \$85 per hour = \$85 | \$0 | \$85 | \$14,960 |

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. “Subtitle VII: Aviation Programs” describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2015-0935; Directorate Identifier 2014-NM-243-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD affects AD 2011-15-03, Amendment 39-16750 (76 FR 41659, July 15, 2011).

(c) Applicability

This AD applies to The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D,

747-400F, 747SR, and 747SP series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-28A2306, dated October 2, 2014.

(d) Subject

Air Transport Association (ATA) of America Code 28, Fuel.

(e) Unsafe Condition

This AD was prompted by several reports of chafing of the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks due to high vibration. These wire bundles can chafe through the wire sleeving into the insulation, exposing the wire conductors. We are issuing this AD to prevent chafing of the wire bundles and subsequent arcing between the wiring and the electrical conduit creating an ignition source in the fuel tanks, which could result in a fire and consequent fuel tank explosion.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Replacement

Within 60 months after the effective date of this AD: Replace the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks with new, improved wire bundles inserted into conduit liners, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-28A2306, dated October 2, 2014. Accomplishing the replacement required by this paragraph terminates the inspections required by paragraphs (g), (h), and (n) of AD 2011-15-03, Amendment 39-16750 (76 FR 41659, July 15, 2011).

(h) Maintenance or Inspection Program Revision

Within 180 days after the effective date of this AD, revise the maintenance or inspection program, as applicable, to incorporate critical design configuration control limitation (CDCCL) Task AWL No. 28-AWL-24, "Fuel Boost Pump Wires In Conduit

Installation – In Fuel Tank,” of Sub-section C.1, “Fuel Tank Ignition Prevention,” of Section C., “Airworthiness Limitations – Systems,” of the Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs) Document D6-13747-CMR, Revision June 2014; or CDCCL Task No. AWL No. 28-AWL-35, “Fuel Boost Pump Wires In Conduit Installation – In Fuel Tank,” of Sub-section B.1, “Fuel System Ignition Prevention,” of Section B, “Airworthiness Limitations (AWLs) – Systems,” of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of Boeing 747-400 Maintenance Planning Data (MPD) Document D621U400-9, Revision June 2014; as applicable.

(i) No Alternative Actions, Intervals, and/or CDCCLs

After accomplishing the revision required by paragraph (h) of this AD, no alternative actions (e.g., inspections), intervals, and/or CDCCLs may be used unless the actions, intervals, and/or CDCCLs are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (j) of this AD.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (k)(1) of this AD. Information may be emailed to:

9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(k) Related Information

(1) For more information about this AD, contact Tung Tran, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6505; fax: 425-917-6590; email: tung.tran@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; phone: 206-544-5000, extension 1; fax: 206-766-5680; Internet: <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on February 18, 2016.

Dorr M. Anderson,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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